

REMARKS

Claims 1, 3, and 7-12, 14-21 and 23-29 are pending in the present application.

Rejection of Claims 25 and 27 under 35 U.S.C. 102(b)

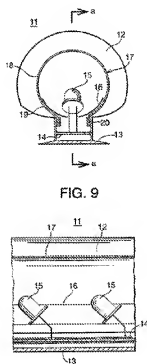
Claims 25 and 27 have been rejected under 35 U.S.C. 102(b) as being anticipated by Wynne Willson (U.S. Patent No. 6,676,284). This rejection is respectfully traversed, although independent claim 25 has been amended to more clearly distinguish the claimed invention from the prior art.

Claim 25, as amended, recites an illumination device for simulating neon lighting. The illumination device includes an essentially solid and substantially rod-like member defining an internal channel along its length, a circuit board received in the internal channel, a multiplicity of spaced point light sources arranged along the circuit board, and a collection surface positioned near the point light sources. The essentially solid and substantially rod-like member has a light-receiving surface and a light-emitting surface. The rod-like member is composed of a substantially flexible compound, and the essentially solid nature of the rod-like member assists in achieving the desired light intensity and uniformity for simulating neon lighting by preferentially directing light along the length of the rod-like member while also urging light out the light-emitting surface of the rod-like member.

The Examiner asserts that that the limitations of claim 25 reflect a “hollow light-conducting rod including a flexible circuit board received in the hollow cavity,” and that the Wynne Willson reference discloses an illumination device having such limitations. Applicants respectfully point out that to anticipate a claim, the cited prior art reference must teach the actual structure and limitations of the claim, and not a re-characterization of what the structure and

limitations “reflect.” Therefore, and as further discussed below, the Wynne Willson reference does not anticipate the actual structure and limitations of the claim 25, as amended.

The rejection of claim 25 was based on the embodiment shown in FIG. 9 of the Wynne Willson reference, which is reproduced below:



The Wynne Willson reference describes FIG. 9 as showing “schematic end-on and partial cross-section views” (col. 10, lines 29-30). Further, the reference describes the apparatus of FIG. 9 as comprising an elongate outer diffuser 12 mounted on a base 13, a printed circuit board 14 also mounted on the base 13, and an inner diffuser 17 also mounted on the base 13 (col. 12, line 55 – col. 13, line 10). A linear array of LEDs 15 is mounted on the circuit board 14 (col. 12, lines 60-61).

The Wynne Willson reference does not anticipate the actual structure and limitations of claim 25 because (1) the Wynne Willson reference does not teach or suggest an essentially solid

and substantially rod-like member; and (2) the Wynne Willson reference does not teach or suggest a circuit board received in an internal channel of the essentially solid and substantially rod-like member.

With respect to the essentially solid and substantially rod-like member structure and limitations, the Wynne Willson reference teaches that the outer diffuser 12 is tubular, and that the inner diffuser 17 is also tubular, such as an optical film mounted on a transparent support (col. 6, line 9; col. 13, lines 8-14). Clearly, FIG. 9 shows the outer diffuser 12 and the inner diffuser 17 as hollow tubes spaced a distance apart from each other. The sectional hatching and shading to indicate curvature of the views of FIG. 9 also clearly indicate that there is empty space between and inside of the outer diffuser 12 and the inner diffuser 17, and that both the outer diffuser 12 and the inner diffuser 17 are hollow (non-solid) tubes.

In contrast, claim 25 recites an essentially solid and substantially rod-like member, which readily distinguishes it from the hollow, tubular outer diffuser 12 and inner diffuser 17 of the Wynne Willson reference. Further, claim 25 now recites that light is “directed along the predetermined length of said rod-like member while also being urged out the light-emitting surface of said rod-like member,” a result that is directly related to the “essentially solid” nature of the substantially rod-like member. The Wynne Willson reference simply does not teach or suggest an essentially solid and substantially rod-like member, such that light entering the rod-like member from the point light sources is directed along the predetermined length of the rod-like member while also being urged out the light-emitting surface of the rod-like member, thus causing a light intensity pattern that appears substantially uniform along the light-emitting surface of the rod-like member.

Still further, with respect to the structure and limitation of the circuit board being received in an internal channel of the essentially solid and substantially rod-like member, FIG. 9 and the cited passages from the specification of the Wynne Willson reference clearly show and describe the circuit board 14 mounted on the base 13 completely external to both the outer diffuser 12 and the inner diffuser 17. The Wynne Willson reference does not teach or suggest the flexible circuit board received in an internal channel defined by the essentially solid and substantially rod-like member, as recited in claim 25.

Thus, it is respectfully submitted that amended claim 25 is allowable over the Wynne Willson reference. Further, claim 27, which depends from claim 25, is also allowable for at least the reasons given in support of the allowability of claim 25.

Rejection of Claims 1, 3, 4, 7-10, 13-15 and 19-24 under 35 U.S.C. 103(a)

Claims 1, 3, 4, 7-10, 13-15 and 19-24 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Takeichi (English-translated Japanese Patent Application Pub. No. JP 61165583) in view of Blanchet (U.S. Patent No. 4,811,507). This rejection is also respectfully traversed, although independent claims 1 and 19 have been amended to more clearly distinguish the claimed invention from the cited references. Claims 4, 13 and 22 have been cancelled. Claims 14 and 23 have been amended to update their dependencies as a result of the cancellation of claims 13 and 22.

Independent claim 1, as amended, is directed to an illumination device for simulating neon lighting, including a substantially rod-like member having a light-receiving surface and a light-emitting surface, and a multiplicity of point light sources extending along the light-receiving surface and spaced to map the light emitted into the rod-like member to create

elongated and overlapping light-intensity patterns along the light-emitting surface. The rod-like member is composed of a substantially flexible compound impregnated with a plurality of micro balloons, each having a shell and deflecting light incident thereon. The light is scattered by the filler causing a light intensity pattern that appears substantially uniform and devoid of hot spots along the light-emitting surface of the rod-like member.

In Office Action, the Examiner points out that Takeichi discloses an illumination device comprising a substantially rod-like member and a plurality of light-emitting elements, where the light emitted from the light-source enters the rod-like member through a light-receiving surface and is scattered. However, it is admitted that Takeichi does not teach that the rod-like member includes micro balloons. The Blanchet reference discloses an illumination device including a light-conducting member formed of a light-transmitting material having micro balloons. The Examiner therefore asserts that it would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the device of Takeichi by providing the rod-like member with micro balloons for the benefit and advantage of providing re-emission of light enhancing the reflection of light within the light guide element.

Applicants respectfully request that the rejection of claim 1 be withdrawn because the combined references do not teach the device of amended claim 1. Neither Takeichi nor Blanchet disclose, alone or in combination, a multiplicity of point light sources arranged to map the light emitted into the rod-like member to create elongated and overlapping light-intensity patterns along the light-emitting surface.

Independent claim 19 is directed to a method of making an illumination device capable of simulating neon lighting, including the step of positioning a multiplicity of point light sources

along a light-receiving surface of a rod, spaced to map the light emitted by each point light source into the rod to create elongated and overlapping light-intensity patterns along a light-emitting surface of the rod. For the reasons provided with respect to independent claim 1, neither Takeichi nor Blanchet disclose, alone or in combination, the multiplicity of point light sources arranged to map the light emitted into the rod-like member to create elongated and overlapping light-intensity patterns along the light-emitting surface.

Thus, for the reasons set forth above, Applicants respectfully submit that claims 1 and 19, as amended, are neither anticipated by nor obvious in view of the cited prior art references, and therefore, are now in condition for allowance. Claims 3, 7-12, 14-18, 20, 21, 23 and 24 depend from claims 1 or 19, and are believed to be allowable in view of the arguments presented above with respect to claims 1 and 19.

Rejection of Claims 26, 28 and 29 under 35 U.S.C. 103(a)

Claims 26, 28 and 29 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Wynne Willson and either Sugiyama et al. (U.S. Patent 6,676,284) or Blanchet. This rejection is also respectfully traversed. Claims 26, 28 and 20 depend from independent claim 25, and it is respectfully submitted that neither Sugiyama et al. nor Blanchet overcome the deficiencies of Wynne Willson discussed above. Thus, claims 26, 28 and 29 are allowable for at least the reasons provided in support of the allowance of amended independent claim 25, as described above.

In light of the foregoing amendments and remarks, Applicants respectfully request allowance of all claims now pending in this Application.

DATED: July 13, 2006

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Jeffrey A. Haeberlin". The signature is fluid and cursive, with the first name "Jeffrey" written in a more compact, stylized manner.

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